September 13, 2002
1420 East 6th Ave.
P.O. Box 200701
Helena, MT 59620-0701

Environmental Quality Council
Montana Department of Environmental Quality
Montana Department of Fish, Wildlife and Parks
Fisheries Division
Endangered Species Coordinator
Bozeman Office
Montana State Library, Helena
MT Environmental Information Center
Montana Audubon Council
Madison-Gallatin Chapter of Trout Unlimited, 1021 Nelson Road, Bozeman, MT 59718
Gallatin County Conservation District, 3710 West Fallon Street, Box B, Bozeman, MT 59715
U.S. Army Corp of Engineers, Helena
U.S. Fish and Wildlife Service, Helena
State Historic Preservation Office, Helena
Sam Hoffman, 2971 Springhill Road, Bozeman, MT 59718
Chuck Slater, 1220 Nelson Road, Bozeman, MT 59718

Ladies and Gentlemen:

Please find enclosed an Environmental Assessment prepared for a Future Fisheries Project tentatively planned to stabilize a series of vertical eroding stream banks totaling approximately 700 feet at four separate sites on the East Gallatin River. An important aspect of this proposed project is to publicly demonstrate the effectiveness of various "soft" bank stabilization techniques. This proposed project is located on properties owned by Sam Hoffman and Chuck Slater approximately 3 miles northwest of the city of Bozeman in Gallatin County.

Please submit any comments that you have by 5:00 P.M., October 13, 2002 to the Department of Fish, Wildlife and Parks in Helena at the address listed above. Completion of this project is contingent upon approval being granted by the Fish, Wildlife and Parks Commission. If you have any questions, feel free to contact me at (406) 444-2432.

Sincerely,

Mark Lere, Program Officer
Habitat Protection Bureau
Fisheries Division
e-mail: mlere@state.mt.us

ENVIRONMENTAL ASSESSMENT
Fisheries Division
Montana Fish, Wildlife and Parks
East Gallatin River Bank Stabilization Project

General Purpose: The 1995 Montana Legislature enacted statute 87-1-272 through 273 that directs the Department to administer a Future Fisheries Improvement Program. The program involves physical projects to restore degraded fish habitat in rivers and lakes for the purpose of improving wild fisheries. The legislature established an earmarked funding account to help accomplish this goal. This project is being proposed to stabilize a total of approximately 700 feet of eroding stream bank at four separate sites on the East Gallatin River. This stabilization work calls for using mostly native materials and reestablishing riparian vegetation to provide a public demonstration on the effectiveness of "soft" bank stabilization methods. The work will involve sloping back vertical banks to a stable angle of repose, installing a river cobble toe, planting willow, seeding with native riparian grasses and installing riparian fencing on treated areas. Each of the four sites will differ in treatment in the use of large woody debris for stabilization and the use of erosion control fabric. These different treatments will provide an opportunity to demonstrate the effectiveness of differing "soft" techniques at stabilizing eroding stream banks. The project sites are located on properties owned by Sam Hoffman and Chuck Slater approximately 3 miles northwest of the city of Bozeman in Gallatin County (Figure 1).

I. Location of Project: This project will be conducted on the East Gallatin River located approximately 3 miles northwest of the city of Bozeman within Township 1 South, Range 5 East, Section 23 in Gallatin County.

II. Need for the Project: One goal within Montana Department of Fish, Wildlife and Parks six-year operations plan for the fisheries program is to "restore and enhance degraded habitats" by implementing habitat restoration projects and administering the Future Fisheries Improvement Program to restore important habitats on public and private lands. This proposed project would help meet this goal.

The East Gallatin River supports rainbow trout, brown trout, brook trout, mountain whitefish and native suckers and is a very popular recreational fishery. Increasing development in the Gallatin Valley has accelerated land conversion from agricultural to small tracts and subdivisions, with more and more homes being built along the margins of stream channels. As a result, an increasing number of homeowners are implementing bank stabilization projects that typically involve some form of blanket rock rip-rap to protect property and infrastructure. Rock rip-rap significantly alters stream function and can adversely affect salmonid populations. Landowners and their contractors commonly are reluctant to try new methodologies unless they are shown effective demonstration projects. The demonstration sites proposed in this project are characterized by high vertical banks that are actively eroding into pasture land and infrastructure.

III. Scope of the Project:

The project proposes to stabilize a series of vertical eroding stream banks at four separate sites totaling about 700 feet in length. Four different bank stabilization treatments are proposed. For the first demonstration area, the project calls for sloping back 240 feet of vertical bank to a more stable angle of repose, fortifying the toe of the bank using washed cobble, placing fully massed cottonwood trees along the toe of the new bank and anchoring them with deadman anchors cabled to the trunks, and re-vegetating

with native grass seed on disturbed areas and willows at the toe of the slope. On a second demonstration site, the eroding bank will be re-sloped to a stable angle of repose and covered with biodegradable erosion control fabric (Figure 2). The toe of the treated bank will be armored with natural cobble materials sized to resist scour for the estimated 20-year discharge and willows and dogwood will be planted near the waterline. The upper bank will be vegetated with native grasses and sedges. The third treatment area calls for protecting the upper bank with a series of soil lifts wrapped in biodegradable erosion control fabric (Figure 3). The soil lifts will be re-vegetated with native grasses, sedges and shrubs. The toe of the bank will be stabilized with natural cobble sized to withstand scour at an estimated 50-year flow event. The fourth treatment area will augment a previous stabilization effort that involved cottonwood logs cable to the bank. The new treatment calls for placing straw bales and/or juniper trees behind the existing the logs and attaching them to the trunks. The project also calls for installing riparian fencing at all four sites to protect the treated areas until vegetation can become established. This project is expected to cost $33,135.00. Of this total, the Future Fisheries Improvement Program would be contributing up to $15,165.00.

IV. Environmental Impact Checklist:

Please see attached checklist.

V. Explanation of Impacts to the Physical Environment

1. Terrestrial and aquatic life and habitats.

Stabilizing a series of vertical eroding stream banks use “soft” stabilization techniques is expected to create a healthier habitat for aquatic life in a localized area. The project calls for improving channel stability, reducing bank erosion and providing for greater habitat diversity. Habitat for riparian dependent wildlife also would be improved by installing riparian fencing and by enhancing the vegetation within the riparian corridor.

2. Water quantity, quality and distribution.

Short-term increases in turbidity will occur during project construction. To minimize turbidity, construction will occur during a low flow period and operation of equipment in the stream channel will be minimized to the extent practicable. The Department of Environmental Quality will be contacted to determine narrative conditions required to meet short-term water quality standards and protect aquatic biota. A 310 permit (Natural Streambed and Land Preservation Act) will be obtained from the local conservation district and the U.S. Army Corp of Engineers will be contacted for requirements needed to meet the federal Clean Water Act (404 permit). In the long term, stabilizing a series of vertical eroding banks on the East Gallatin River would reduce the contribution of fine sediment into downstream waters.

3. Geology and soil quality, stability and moisture.

Soils along the stream margin would be disturbed during construction, but would be stabilized with erosion control fabric and proposed re-vegetation efforts. The installation of riparian fencing would protect the corridor and allow vegetation to become established. Overall, the project is

expected to reduce bank erosion and improve channel stability by restoring vertical banks to a stable angle of repose and by promoting the recovery of the riparian vegetative community.

4. Vegetation cover, quantity and quality.

Riparian vegetation and cover, primarily grasses, would be disturbed during the period of construction. However, proposed re-vegetation efforts and the installation of riparian fencing would act to mitigate these disturbances.

5. Aesthetics.

Aesthetics would be negatively affected during project construction due to ground disturbance and the presence of heavy equipment. In the long term, aesthetics would be enhanced by restoring and re-vegetating 700 feet of eroding stream bank on the East Gallatin River.

9. Historic and archaeological sites

The proposed project may require an Army Corp of Engineers 404 permit. Therefore, the State Historic Preservation Office will be contacted to determine the need for compliance with the federal historic preservation regulations. The project will not begin until a cultural clearance is granted.

VI. Explanation of Impacts on the Human Environment.

7. Access to & quality of recreational activities.

The East Gallatin River contains robust populations of brown trout and rainbow trout and supports a popular recreational fishery. Both landowners involved with this project have graciously allowed anglers to access the river through their property, only requiring that permission be secured. Stabilization of eroding stream banks at four treatment sites would improve overall aquatic habitat within this short reach of river and, consequently, would be expected to attract fish and improve fishing opportunities in a localized area.

VII. Discussion and Evaluation of Reasonable Alternatives.

1. No Action Alternative

If no action is taken, this reach of East Gallatin River will continue to be unstable and bank erosion will continue to accelerate. Recreational opportunities associated with fish and wildlife resources will remain reduced and aesthetics will continue to be impaired. Additionally, the opportunity for demonstrating “soft” bank stabilization techniques to the public would be lost.

2. Rip-rap Alternative

The series of vertical stream banks could be armored with rock rip-rap to prevent further erosion. However, armoring the stream bank with rock would inhibit the recovery of riparian vegetation,

encourage entrenchment of the channel, and pass erosion energy downstream to unprotected areas. Additionally, the opportunity for demonstrating "soft" bank stabilization techniques to the public would be lost.

3. The Proposed Alternative

The proposed alternative is designed to stabilize a series of vertical eroding stream banks at four separate sites on the East Gallatin River. A main goal of the project is to provide a public demonstration of the effectiveness of using "soft" techniques for bank stabilization. While restoration of this relatively short reach of river likely will have little impact on overall fish populations, enhancement efforts are expected to attract fish and improve habitat and fishing opportunities in a localized area.

VIII. Environmental Assessment Conclusion Section

1. Is an EIS required? No.

We conclude from this review that the proposed activities will have a positive impact on the physical and human environment.

2. Level of public involvement.

The proposed project was reviewed and supported by the public review panel of the Future Fisheries Improvement Program. The proposed project also will be reviewed by the Fish, Wildlife and Parks Commission and will be contingent upon their approval. The Environmental Assessment (EA) is being distributed to all individuals and groups listed on the cover letter. The EA also will be published on Montana Fish, Wildlife and Parks web page: fwp.state.mt.us.

3. Duration of comment period?

Public comment will be accepted through 5:00 PM on October 13, 2002.

4. Person responsible for preparing the EA.

Mark Lere, Program Officer
Habitat Protection Bureau
Fisheries Division
Montana Department of Fish, Wildlife and Parks
1420 East 6th Avenue
Helena, MT 59620

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MONTANA DEPARTMENT OF FISH, WILDLIFE AND PARKS
1420 E 6th Ave, PO BOX 200701, Helena, MT 59620-0701
(406) 444-2535

ENVIRONMENTAL ASSESSMENT

Project Title East Gallatin River Bank Stabilization Project

Division/Bureau Fisheries Division -Future Fisheries Improvement

Description of Project The project is being proposed to stabilize a series of vertical eroding stream banks totaling approximately 700 feet at four separate sites on the East Gallatin River to publicly demonstrate the effectiveness of various “soft” stabilization techniques. The project area is located on properties owned by Sam Hoffman and Chuck Slater approximately 3 miles northwest of the city of Bozeman in Gallatin County.

POTENTIAL IMPACT ON PHYSICAL ENVIRONMENT

	MAJOR	MODERATE	MINOR	NONE	UNKNOWN	COMMENTS ON ATTACHED PAGES
1. Terrestrial & aquatic life and habitats			X			X
2. Water quality, quantity & distribution			X			X
3. Geology & soil quality, stability & moisture			X			X
4. Vegetation cover, quantity & quality			X			X
5. Aesthetics			X			X
6. Air quality				X		
7. Unique, endangered, fragile, or limited environmental resources				X		
8. Demands on environmental resources of land, water, air & energy				X		
9. Historical & archaeological sites				X		X

POTENTIAL IMPACTS ON THE HUMAN ENVIRONMENT

	MAJOR	MODERATE	MINOR	NONE	UNKNOWN	COMMENTS ON ATTACHED PAGES
1. Social structures & mores				X		
2. Cultural uniqueness & diversity				X		
3. Local & state tax base & tax revenue				X		
4. Agricultural or industrial production				X		
5. Human health				X		
6. Quantity & distribution of community & personal income				X		
7. Access to & quality of recreational and wilderness activities			X			X
8. Quantity & distribution of employment				X		
9. Distribution & density of population & housing				X		
10. Demands for government services				X		
11. Industrial & commercial activity				X		
12. Demands for energy				X		
13. Locally adopted environmental plans & goals				X		
14. Transportation networks & traffic flows				X		

Other groups or agencies contacted or which may have overlapping jurisdiction Gallatin County Conservation District, US Fish and Wildlife Service, US Army Corp of Engineers, Montana Department of Environmental Quality, State Historic Preservation Office
Individuals or groups contributing to this EA Pat Byorth, Montana Fish,

Wildlife and Parks; Drake and Associates; Confluence, Inc.
Recommendation concerning preparation of EIS No EIS required.
EA prepared by: Mark Lere
Date: September 13, 2002

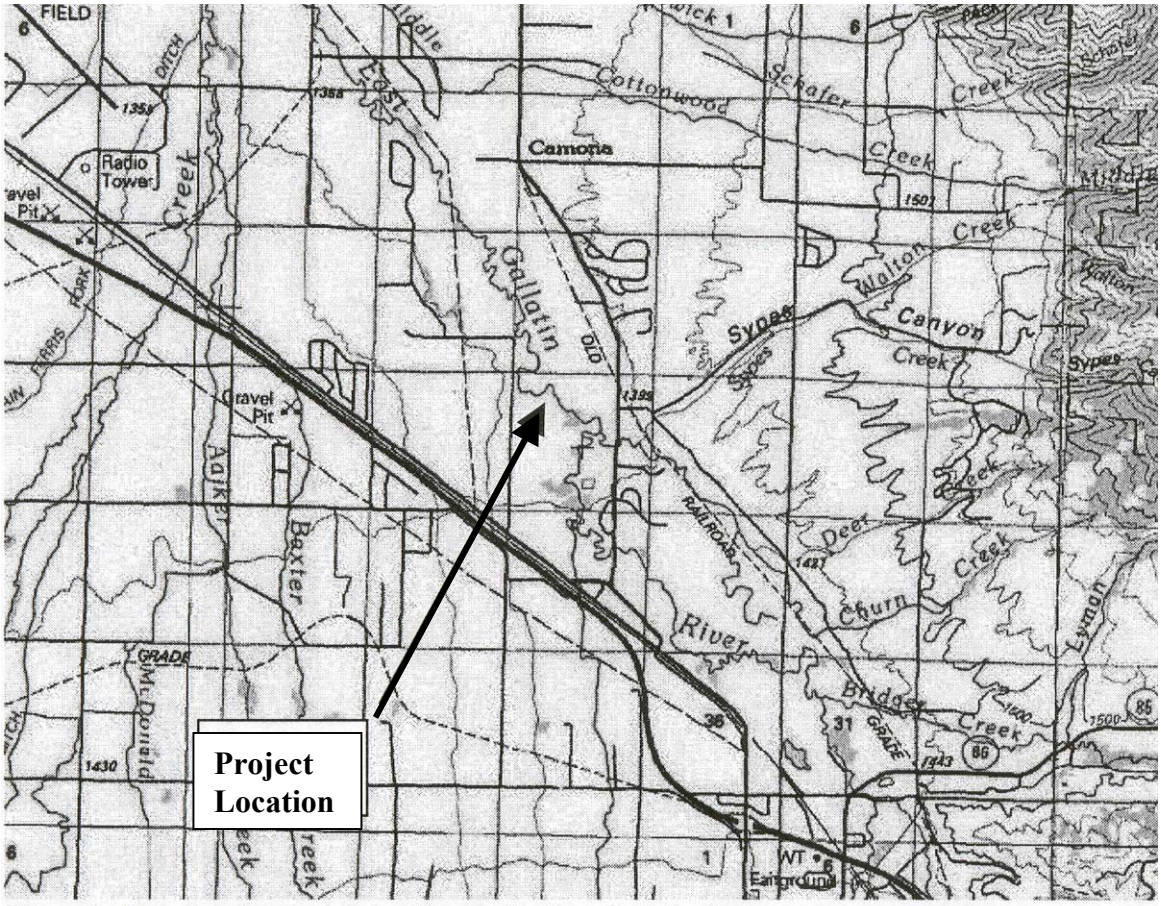
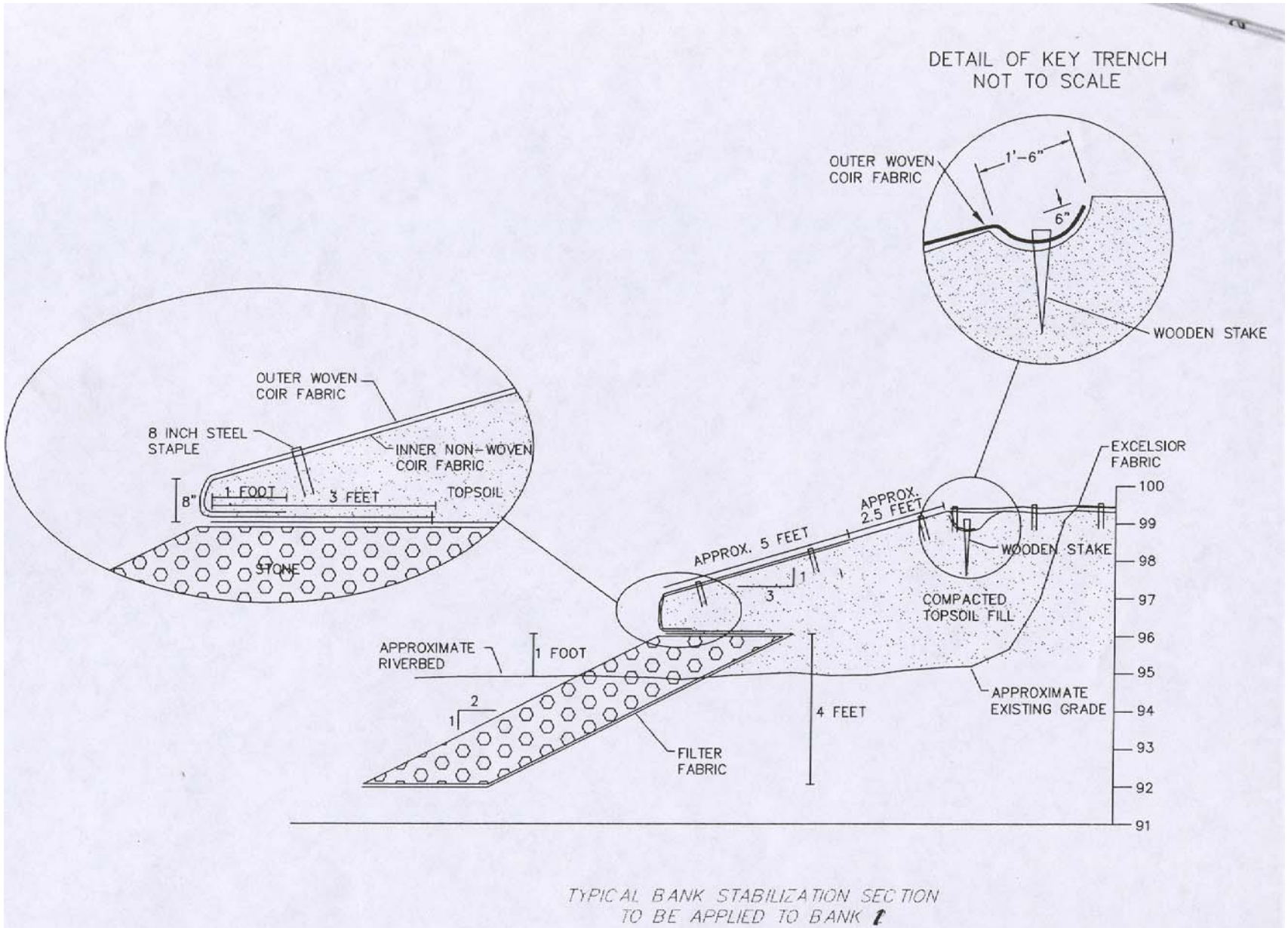


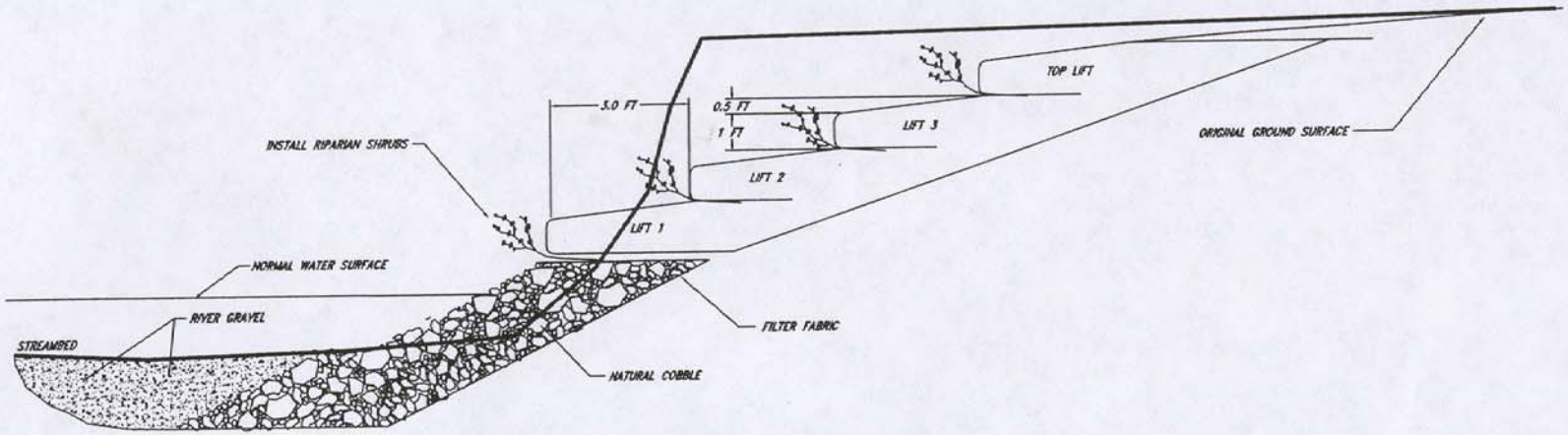
Figure 1. Map showing project location on the East Gallatin River.



TYPICAL BANK STABILIZATION SECTION
TO BE APPLIED TO BANK 1

HOFFMAN RANCH BANK 1 TYPICAL

Figure 2.



TYPICAL CROSS-SECTION VIEW OF ROCK TOE AND VEGETATIVE TREATMENTS

HOFFMAN RANCH BANK 2 TYPICAL

Figure 3